

CLAIMS

What is claimed is:

1. A bulk power supply providing a supply power output for a user system comprising:
 - a first converter subsystem that receives a first type of power from a first grid and is capable of producing a first power output; and
 - a second converter subsystem that receives a second type of power from a second grid and is capable of producing a second power output;wherein if the first and second converter subsystems are operating, then the supply power output is equal to approximately one half of the first power output plus approximately one half of the second power output;
- wherein if the first converter subsystem fails, then the supply power output is equal to the second power output.
2. The bulk power supply of claim 1 wherein:
 - the first type is different from the second type.
3. The bulk power supply of claim 2 wherein each of the first type and the second type is selected from the group consisting of:
 - three phase delta, three phase wye, and single phase power.
4. The bulk power supply of claim 1 wherein:
 - the first type is the same as the second type.
5. The bulk power supply of claim 4 wherein the first type is selected from the group consisting of:
 - three phase delta, three phase wye, and single phase power.

6. The bulk power supply of claim 1 wherein each converter subsystem comprises:
a line filter that prevents signals from being reflected back in the grid;
a rectifier for converting the power from the grid to DC power;
a power factor correction to ensure the DC power has at least a predetermined value for power factor; and

a DC converter that receives the corrected DC power and produces an output that is at a level usable by the user system.

7. The bulk power supply of claim 1 wherein
the bulk power supply is one of a plurality of bulk power supplies;
the plurality of bulk power supplies is equal to $N+1$, wherein N is the number of bulk power supplies required to supply the user system; and

whereby a failure of one bulk power supply will permit the remaining bulk power supplies to provide power to the user system.

8. The bulk power supply system of claim 3 wherein:
each bulk power supply may be replaced while the user system is on-line.

9. A method of providing a supply power output for a user system comprising:
receiving a first type of power from a first grid;
forming a first power output from the first type of power by a first system;
receiving a second type of power from a second grid and is capable of producing a second power output;
forming a second power output from the second type of power by a second system;
forming the supply power output from approximately one half of the first power output and approximately one half of the second power output, if the first system and the second system are operating; and

forming the supply power output from the second power output, if the first system is not operating.

10. The method of claim 9 wherein:
the first type is different from the second type.

11. The method of claim 10 wherein each of the first type and the second type is selected from the group consisting of:

three phase delta, three phase wye, and single phase power.

12. The method of claim 9 wherein:

the first type is the same as the second type.

13. The method of claim 12 wherein the first type is selected from the group consisting of:

three phase delta, three phase wye, and single phase power.

14. The method of claim 9 wherein forming the first power output and forming the second power output each comprises:

preventing signals from being reflected back in the grid;

converting the power from the grid to DC power;

correcting the DC power to ensure the DC power has at least a predetermined value for power factor; and

producing an output that is at a level usable by the user system from the corrected DC power.

15. A method of providing a supply power output for a user system comprising:

receiving AC power from a first grid;

forming a first power output from the AC power from the first grid by a first system;

receiving AC power from a second grid;

forming a second power output from the AC power from the first grid by a second system;

forming the supply power output from approximately one half of the first power output and approximately one half of the second power output, if the first system and the second system are operating; and

forming the supply power output from the second power output, if the first systems is not operating..

16. The method of claim 15 wherein forming the first power output and forming the second power output each comprises:

preventing signals from being reflected back in the grid;

converting the AC power to DC power;

correcting the DC power to ensure the DC power has at least a predetermined value for power factor; and

producing an output that is at a level usable by the user system from the corrected DC power.